Prepare for the Emerald Ash Borer

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Part I: Overview of Department

Mission Statement:

"Our mission is to maintain a healthy urban forest by providing expert maintenance for the trees found in the right-of-way (ROW) and other trees located throughout in City-owned cemeteries, golf courses and parks."

The forestry division is responsible for all ROW and City-owned trees in the Des Moines region.

Current Main Project: Emerald Ash Borer (EAB)
The EAB, which is in Iowa, destroys ash trees from the inside out. This means infected trees become high risk hazards. The Des Moines Public Works Forestry Division is completing a data set for all of the ash trees in the Des Moines region. The current solution in Des Moines is to remove 2/3 or the current ash tree population while treating the remaining 1/3.

Part II: Extern Job Specifics

We are compiling a complete data set for all ash trees in the Des Moines region from two different surveys. The two surveys have been combined and discrepancies were highlighted. We are verifying each discrepancy in person. If there is no ash tree at the discrepancy point we cross out the point. If there is an ash tree we measure the tree's diameter with DBH tape and mark the tree for either removal or treatment. We decide the tree's fate based on physical characteristics of the tree and the surrounding area. For example. If the tree is growing into power lines, we mark the tree for removal.

Part III: Introduce the Problem

Invasive beetles such as the Emerald Ash Borer and the Asian Long-horned Beetle have entered Iowa and are destroying native trees. People care about this issue, because these beetles turn living trees into environmental and living hazards. This means that infected trees are dangerous for everyday living. The forestry division in Des Moines has heard rumors of a new beetle entering Iowa only a few weeks ago. Little is known about how this new beetle will affect Iowa's native trees. For the Des Moines Forestry Division to begin preparations to save existing native trees, they need your help in collecting information. The Forestry Division wants a complete inventory and map of the trees at Amos Hiatt Middle School and your decisions on what should be done.

Part IV: Building Background

Students will explore the school grounds focused on mapping tree locations.. Students will use their own criteria to map and identify trees. The teacher can guide student criteria by setting up competitive based incentives such as find the "best" tree (classroom discussions can be held to decide this criteria). After students have collected data, shared information, and created final data sets based on their criteria, students should research how scientists collect information on trees. A new data set/inventory should be created based on national/global scientific standards.

Based on the data students collected, the teacher can provide information about the "new" beetle. This beetle can be hypothetical or real based on the data collected and what the teacher wants students to consider while creating for solutions to prepare for this new beetle. The teacher can hold classroom discussions and/or let students research similar cases. Students could also debate possible solutions and present ideas in a public forum.

Part V: Forestry Division Solutions

Des Moines' current solution is to remove most of the ash trees with average or poor conditions while treating ideal ash trees. Different types of trees will then be planted where current trees are removed. Within three years, the forestry division will check on the remaining ash trees and make decisions to remove or treat again.

Part VI: Student Solutions

The two main solutions most students will focus on will be to either remove or treat existing trees that the "new" beetle will target. There could also be solutions on what to do with the land if trees are removed and the trees themselves. Some students may decide that we should find resources to kill the beetle and leave the trees alone.